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10/613,577	07/02/2003	Koichi Yoshihara	7674 US	4481

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MATTHEW D. RABDAU
TEKTRONIX, INC.
14150 S.W. KARL BRAUN DRIVE
P.O. BOX 500 (50-LAW)
BEAVERTON, OR 97077-0001

EXAMINER
WANG, TED M

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/613,577	YOSHIHARA, KOICHI	
	Examiner	Art Unit	
	Ted M. Wang	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 8-10* is/are rejected.

7)☒ Claim(s) *4-7 and 11-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments, filed on 04/10/2007, with respect to the rejection(s) of claim(s) 1-3, 7-10 and 14 under 35 USC 102(b) and 103(a) have been fully considered and are persuasive that neither McKissock nor Cordell nor their combination teaches or suggests " means for deriving quadrature component signals and a symbol clock from the modulated " as recited by claims 1 and 8. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the admitted prior art of the instant application.

Specification

2. The disclosure is objected to because of the following informalities:

- Page 11, line 8, change "18" to --- 20 ---.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 3/1, 4/3/1, 5/3/1, 6/5/3/1, 7/1, 8, 10/8, 11/10/8, 12/11/10/8, 13/10/8 and 14/8 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The limitation of "means for generating a sample clock having a period equal to the symbol clock, the sample clock being shifted one-half period in phase with respect to the symbol clock; and means for sampling the quadrature component signals

with the sample clock to produce the pseudo-symbols as pairs of pseudo-symbols about a symbol sample point for each symbol." is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

- With regard claims 1 and 8, page 11 of the instant application describes a typical receiver of a modulated signal as modified according to the instant application. It teaches that the instant application is different from the conventional receiver by inserting a delay module between STR 28 and A/D converters 32, 34 to provide the sample clock which has the same period as the symbol clock but is delayed in phase with respect to the symbol clock by one-half period as recited in page 11, lines 1-20. Thus, without the critical or essential element, MOD DELAY (Fig.15 element 30), the pseudo-symbol will not be generated.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1 and 8 are rejected under 35 U.S.C. 102(a) as being anticipated by the admitted prior art of the instant application.

- With regard claim 1, the admitted prior art of the instant application teaches

means for deriving quadrature component signals and a symbol clock from the modulated (Page 11 lines 12-14);

means for sampling the quadrature component signals to produce pseudo-symbols for each symbol in the modulated signal (page 11 lines 10-15, where the pseudo-symbol is considered as shown in Fig.2 and 3 since the essential element to generate the pseudo-symbol of the instant application has not been included in the claim.); and

means for displaying the pseudo-symbols on a quadrature coordinate plane (Fig.2 and page 2 lines 13-23).

- With regard claim 8, which is a method claim related to claim 1, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application in view of Cordell (US 4,756,011).

- With regard claim 2, the admitted prior art of the instant application teaches sampling the incoming quadrature component signals with a sample clock (page 11, lines 12-14).

The admitted prior art of the instant application discloses all of the subject matter as described in the above paragraph except for specifically teaching the sample clock has a period equal to the symbol clock, but is shifted one-half period in phase with respect to the symbol clock.

However, this type of sampling is used often in the art and accomplished with different phases of the same symbol clock, as illustrated in Cordell. Cordell teaches a digital phase aligner that samples an incoming data stream with a sample clock that is shifted by 180 degrees, or one-half period, from the symbol clock (Fig. 2B; Col. 3, lines 56-61; Col. 4, lines 55-65). Therefore, it would have been obvious to one of ordinary skill in the art to use the sampling technique taught by Cordell within the sampling function taught by the admitted prior art of the instant application. Doing so would allow the system to better capture the movement of the incoming waveform and its synchronization, or lack thereof, with the sampling clock.

- With regard claim 9, which is a method claim related to claim 2, all limitation is contained in claim 2. The explanation of all the limitation is already addressed in the above paragraph.

9. Claims 3/1 and 10/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application as applied to claim 1 above, and further in view of Touzni et al. (US7,031,405).

- With regard claim 3/1, the admitted prior art of the instant application discloses all of the subject matter as described in the above paragraph except for specifically teaching means for generating a template for the displaying means representing an ideal modulated signal.

However, Touzni et al. teaches means for generating a template for the displaying means representing an ideal modulated signal (Fig.3 and column 5 lines 12-30) in order to provide the constant modulus (CM) criterion to the system for easy calculating the dispersion constant so applying a CM criterion to the constellation does not penalize spatial rotation of the constellation due to residual carrier offset. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include means for generating a template for the displaying means representing an ideal modulated signal as taught by Touzni et al. into the conventional receiver as described by the admitted prior art of the instant application (page 11 lines 1-16) so as to provide the constant modulus (CM) criterion to the system for easy calculating the dispersion constant so applying a CM criterion to the constellation does not penalize spatial rotation of the constellation due to residual carrier offset.

- With regard claim 10/1, which is a method claim related to claim 3/1, all limitation is contained in claim 3/1. The explanation of all the limitation is already addressed in the above paragraph.

10. Claims 3/2 and 10/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application and Cordell (US 4,756,011) as applied to claim 2 above, and further in view of Touzni et al. (US7,031,405).

- With regard claim 3/2, the admitted prior art of the instant application and Cordell disclose all of the subject matter as described in the above paragraph except for specifically teaching means for generating a template for the displaying means representing an ideal modulated signal.

However, Touzni et al. teaches means for generating a template for the displaying means representing an ideal modulated signal (Fig.3 and column 5 lines 12-30) in order to provide the constant modulus (CM) criterion to the system for easy calculating the dispersion constant so applying a CM criterion to the constellation does not penalize spatial rotation of the constellation due to residual carrier offset. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include means for generating a template for the displaying means representing an ideal modulated signal as taught by Touzni et al. into the modified conventional receiver as described by the admitted prior art of the instant application (page 11 lines 1-16) and Cordell so as to provide the constant modulus (CM) criterion to the system for easy calculating the dispersion constant so applying a CM criterion to the constellation

does not penalize spatial rotation of the constellation due to residual carrier offset.

- With regard claim 10/2, which is a method claim related to claim 3/2, all limitation is contained in claim 3/2. The explanation of all the limitation is already addressed in the above paragraph.

Allowable Subject Matter

11. Claims 4-7 and 11-14 are objected to as being dependent upon an objected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang
Examiner
Art Unit 2611

Ted M. Wang